MONTANA UNDERGROUND STORAGE TANK PROGRAM NEWSLETTER

MUST News

Department of Environmental Quality Fall Issue 2003

INSIDE THIS ISSUE

Now you can fill out forms on-line

The Technical Services Bureau of DEQ has new forms available for tank owners and operators and licensees that can be filled out on-line.

Web sites of the Environmental Services Section (http://www.deq.state.mt.us/Rem/tsb/ess/index.asp) along with the Petroleum Fund Services Section (http://www.deq.state.mt.us/Rem/tsb/pfss/Index.asp) and the Petroleum Release Section now have a number of Adobe forms that can be directly filled out by you from your computer while on-line. The same forms still remain accessible as always via computerized Word programs, too.

To fill out forms on-line you must have Adobe Acrobat 5.0 or higher (a free download from Adobe is available from our Web sites http://www.adobe.com/products/acrobat/readstep2.html) and a computer printer connected to your system. Simply click on the hyperlink to the form you need to fill out and when it displays on the screen, type all relevant information into the data input boxes. When completed, print the form on your printer, add your original signature, and send it off to us. It is a quicker, more accurate, and easier way of submitting your paperwork. *continued on page 2*

Petro Board hires Terry Wadsworth

Terry Wadsworth of Helena has been hired as executive director of the Montana Petroleum Tank Release Compensation Board.

Acting Board Chairman Barry Johnston said, "The board of directors is pleased to announce that Terry Wadsworth has accepted the position. Terry brings with him the background and experience to effectively manage the fund and the respective statutory requirements."

Wadsworth, a native of Ronan, has been the supervisor of the Water Quality Reporting Section in the Montana

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Montana Department of Environmental Quality

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Now you can fill out forms on-line - *continued from page 1*

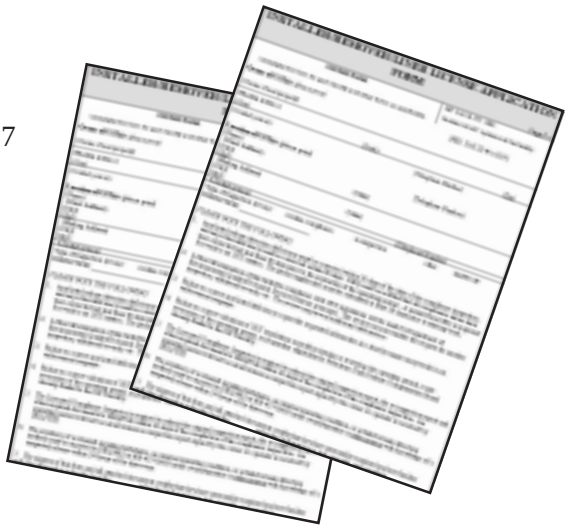
The following forms are available to fill out on-line:

ESS Forms

- Installer/Remover/Liner License Application Form
- Installer/Remover/Liner Renewal Application Form
- Compliance Inspector Application Form
- Installer/Remover/Liner Reference Form
- UST Registration Form for Training and Testing
- Study Guide and Application Request Form (for ordering Study Guide and License Applications)

PTRC Forms

- Application for Petroleum Release Eligibility – Form 1-R
- Application for Voluntary Registration of Petroleum Storage Tanks - Form 1-V
- Assent to Audit – Form 2
- Designation of Representative - Form 5
- Acknowledgement of Payment - Form 6
- Owner Operator Insurance or Third Party Liability - Form 7
- Corrective Action Plan Budget Modification - Form 8



PRS and PTRC Forms

Unit Cost Worksheets:

- Groundwater Monitoring and Sampling Unit Cost
- Soil Boring/Monitoring Well Installation Unit Cost
- Soil Excavation Unit Cost

PRS Form

- Unusual Operating Conditions Notification Form ■

Petro Board hires Terry Wadsworth - *continued from page 1*

Department of Environmental Quality's Planning Prevention and Assistance Division.

Previously, Wadsworth was president and principal scientist for TechSolv Consulting Inc. He also has experience as a senior scientist and national technical director for data management for ARCADIS of Denver. He has more than 20 years' experience in the environmental industry and has conducted numerous conference presentations and training seminars on environmental contamination and water supply topics.

Wadsworth earned an undergraduate degree in math and computer science from Montana State University and a master's in information systems from George Mason University.

The board is responsible for managing the Petroleum Tank Release Cleanup Fund which assists owners and operators of petroleum storage tanks in cleaning up ground contamination from petroleum spills or leaks. A fee on petroleum fuels funds the reimbursement programs. The board meets every other month in Helena to monitor fund solvency, to review and approve claims for reimbursement from the fund and conduct other business. ■

Meet Barry Johnston

One in a series of get-acquainted articles about Petro Board members

Barry Johnston, chairman of the Petroleum Tank Release Compensation Board, has a wealth of experience in banking, government, and living near big Montana lakes. He was raised in Fort Peck and now he and his wife and three sons live in Bigfork.

He's a graduate of Glasgow High and the University of Montana where he earned a degree in business administration.

At present, Johnston is the credit administrator for Glacier Bancorp Inc., a holding company that owns six banks in Montana and two in Idaho. The company has assets totaling $2.5 billion and operates in 56 locations.

Previously, Johnston worked 10 years as a national bank examiner with the U.S. Department of the Treasury's Office of the Comptroller of the Currency, which oversees operations of national banks.

His previous experience also includes a position as credit administrator with First Interstate banks in Boise, Salt Lake City and Las Vegas. He held the same position with Nevada State Bank in Las Vegas and, from 1999 until 2001, was senior credit officer for Western Security Bank in Missoula until its acquisition by Glacier Bancorp. ■

Rules Changes Proposed

The department's UST program is making several revisions to its rules in response to recent legislative action. This proposed rulemaking implements House Bill 144 enacted by the 58th Montana Legislature this year. The bill amended sections 75-11-505 and 75-11-509, Montana Code Annotated (MCA). Amendments to 75-11-509, MCA, correct problems with the requirement that all owners and operators of USTs, both active and inactive, obtain a compliance inspection at least once every three years. Section 75-11-509(1), MCA, now requires owners and operators of active USTs to have their tanks inspected and obtain an operating permit in order to continue active operation of the tanks. Inactive tanks are no longer subject to these compliance inspection requirements, but must comply with requirements for testing, inspection, record-keeping and reporting before returning their UST systems to active operation.

HB 144 also amended 75-11-505, MCA, by authorizing the department to increase annual tank-registration fees to support the UST program. The proposed amendment to ARM 17.56.1001 raises the amounts the department may assess annually in tank-registration fees to $108 for each tank over 1,100 gallons, and $36 for each tank 1,100 gallons or less. The proposed fee would be at the minimum level necessary to continue to provide funding for the existing program and would take effect January 1, 2004.

The proposed amendment to ARM 17.56.309 deletes all references to compliance plans and provisional operating tags. The amendments would require an initial inspection of UST systems that are returned to active status between 90 and 120 days after the conditional operating permit is issued. This proposed amendment makes the rule consistent with the statute by specifically requiring tank owners, operators or compliance inspectors acting on behalf of owners or operators to submit a copy of the compliance inspection

Rules changes proposed - *continued from page 3*

report to the department and adding a time frame by which corrective action to address violations noted in the compliance inspection report and a follow-up inspection must be completed.

Other proposed amendments include penalty amounts for violations associated with tank inspections, establishing rules for one-time fill permits, emergency operating permits, and clarifying rules for changes of ownership.

Readers on the department's interested persons list should have received a copy of the proposed rules by now. If not, you may obtain a copy from the department's Web site http://www.deq.state.mt.us/index.asp or by calling (406) 444-1420. Oral comment on the draft rules will be received at a hearing at 10 a.m., November 5, 2003, in the Lewis Room of the DEQ office building, 2209 Phoenix Ave. Written comments must be postmarked no later than November 13, 2003, addressed to Kirsten Bowers, Department of Environmental Quality, P.O. Box 200901, Helena, MT 59620-0901. Comments also may be submitted via fax, 406-444-1902, or by e-mail: kbowers@state.mt.us. ■

Tank Inspections: timing is everything

In April, we closed out the first round of compliance inspections. To prepare for your next inspection, the DEQ recommends:

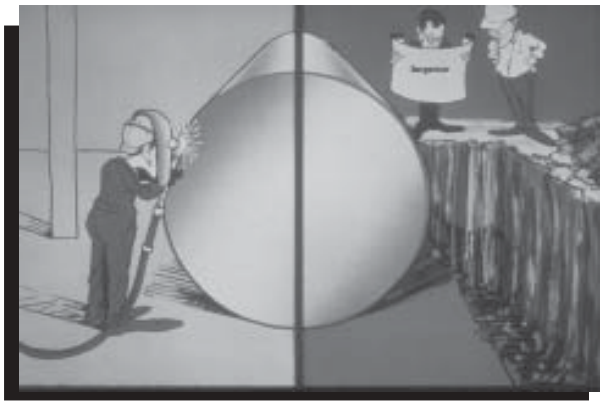
- Track your expiration date;
- Don't wait too long;
- Don't inspect too early.

State rules require that owners conduct an inspection at least 90 days before the expiration of their operating permit. Look at that date on your permit or your operating tags. DEQ recommends that you schedule your inspection even further in advance of the expiration date than the required 90 days. If the inspection identifies deficiencies, you will want time to correct them and get a reinspection before the expiration. Leak-detection deficiencies must be fixed within 60 days of an inspection and all other deficiencies within 90 days.

One busy airport fueling facility did not reinspect until six days after their permit expired. They could not fill their tanks for a week and had no time to correct their rather minor deficiency. Both violations were subsequently referred to enforcement.

Another facility was inspected two weeks before their operating permit expired. The inspection showed the need to do work that required a permit. They will almost certainly have to cease operation for a while to make repairs.

At the other extreme are facilities that were inspected over a year before their permit's expiration. As their new expiration date will be three years from when the department received a passing inspection, they will forego a year of validity on their current operating permit or need another inspection to maintain the same cycle. Inspecting early is lawful and there may be good reason for doing so, but owners should be aware that the time lost on their first permit will not be applied to their new expiration date. ■



Above-ground storage tanks: How much do we know?

In response to a request from the Montana Petroleum Tank Release Compensation Board, staff of the Petroleum Fund Services Section of DEQ conducted a study of above-ground storage tanks (ASTs) in Montana. The study sought to identify the number and type of ASTs in Montana and their potential liability to the Fund.

The study's results are based on a survey of tank owners and data from the 1997 Census of Agriculture in Montana. The study revealed that there are at least 136 above-ground bulk facilities, 8,536 heating oil tanks and approximately 12,625 tanks on farms and ranches. The study assumed that every farm or ranch of more than 500 acres had at least one AST.

If every one of those tanks leak and the cost of cleanup was the same as for releases from tanks that have already had a release cleaned up using Petro Funds, the Fund would have a potential worst-case liability of approximately $75 million dollars. If releases from these ASTs follow established trends, the potential liability would be significantly lower, $4.9 million dollars. ■

DEQ cathodic protection tester course

A course for learning testing know-how from an industry expert

A certification program recognized and facilitated by the Montana Department of Environmental Quality for cathodic protection testers is set for spring 2004. The course offers a practical approach for on-site testers who need to understand cathodic protection readings. It will focus on real-world needs of individuals and companies that conduct field testing of cathodic protection systems. With a test, this course will certify qualifying participants as cathodic protection (CP) testers of underground storage tanks. Participants will earn 16 continuing education credits (CEC) toward fulfillment of DEQ triennial licensing-renewal requirements. However, this class does not satisfy the 8-hour CEC refresher requirement.

Outline of Course

Corrosion Basics - Taking the mystery out of the natural phenomenon of corrosion.

How Cathodic Protection Works - Showing how a technology can use natural processes to protect structures such as underground storage tanks and piping.

Monitoring Cathodic Protection - Hands-on use of equipment to teach measurement methods such as structure-to-soil potential, and continuity testing.

Troubleshooting Techniques - Demonstrating impact of measurement techniques. This class will also teach how to conduct troubleshooting tests to help identify problems.

Regulatory Requirements - What state regulators expect in CP testing and reporting.

Hands on Demonstration - Priority for hands-on classroom demonstrations clearly show how the testing should be conducted.

Field Testing - Classroom lessons applied in the field - plan on getting dirty. The class will go to two tank sites.

Further Information

• Dennis Burke, PE
NACE Certified Corrosion Specialist, 206-528-7430, or

• Redge Meierhenry
DEQ Solid and Hazardous Waste Specialist, 406-444-1417

Robert Blackman killed in storage tank explosion

An underground storage tank repairman from Portland, Oregon, Robert Blackman, was killed last month in the explosion of an underground gasoline storage tank in Lacey, Washington.

Blackman was employed by Tank Liners Central of Vancouver, Washington, with a contract for routine maintenance of the Chevron station tanks in Lacey, a suburb of Olympia. Blackman and two co-workers reportedly were finishing their maintenance work on the tank at the time of the accident September 2.

News reports said an investigation was under way to determine how and why it occurred. "There is a process where they have to grind a piece of the tank in order to finalize. Whether they had in fact done that or were in the process of doing that we won't know until the investigation is complete," said Capt. Chris von Neudegg of Lacey Fire District No. 3.

One of several witnesses at the scene, Mindy Reese, said she had just pulled into the station on Ruddell Road when she saw Blackman fall from about 30 feet in the air. The explosion and flash fire had completely burned away the victim's clothing, Reese said. Reese, a surgical technician, checked the body for vital signs but didn't find any. *From KOMO, Seattle, by permission.* ■

Publication outlines safety requirements

The American Petroleum Institute Publication 2015, "Cleaning Petroleum Storage Tanks," addresses proper safety precautions for gas freeing, entry into, cleaning and exiting from petroleum storage tanks.

Bioremediation In Montana

By Scott Gestring
Petroleum Release Section, DEQ

Last in a Series

For a petroleum release site in Montana to be considered for bioremediation, the site has to be evaluated for suitability (i.e., contaminant biodegradability and concentration, number of colony – forming units, groundwater pH, dissolved iron concentration, temperature, groundwater hardness, etc.). The extent and magnitude of the contaminant plume has to be defined, potential receptors evaluated and the contaminant mass must be determined using site-specific analytical data. This mass estimate is crucial for determining how much oxygen or residual hydrocarbon mass. An upgradient well must be present to determine background groundwater quality. Appropriate analytical data including natural attenuation parameters must be obtained for the site-related wells and nearby irrigation and commercial or domestic drinking water wells to establish baseline conditions prior to adding nutrients.

For nitrate addition, the water quality standard of 10 ppm cannot be exceeded outside of the dissolved phase plume boundary. Site-related wells and nearby irrigation, commercial and drinking water wells will need to be monitored following addition of nutrients. The in-situ remediation system must include hydraulic controls such as pumping wells or recovery trenches to ensure that nutrients do not migrate beyond the plume boundary at concentrations exceeding WQB7 standards or at concentrations that would create WQB7 exceedances in downgradient wells due to an additive effect (baseline concentration plus added or injected nitrate concentration migrating offsite).

When is Bioremediation Appropriate?

The suitability of a site for bioremediation depends not only upon the contaminant's biodegradability but also on

Bioremediation In Montana - *continued from page 6*

the site's geological and chemical characteristics. For engineered bioremediation (engineered system which supplies microbe-stimulating material such as oxygen and nutrients), the key site characteristics are permeability of the subsurface to fluids, homogeneity of the subsurface, and relatively low (less than 50,000 mg/kg solids) residual concentrations of nonaqueous-phase contaminants. In-situ bioremediation generally works well for higher permeability sediments such as sands and gravels. The concentration of dissolved iron and water hardness in groundwater at the site can also determine the effectiveness of the engineered bioremediation system. In instances where oxygen is being introduced to the subsurface, it can react with dissolved iron in soils materians or groundwater to form an insoluble precipitate. This precipitate can hinder the effectiveness of bioremediation, therefore it is not recommended if the concentration of dissolved iron is greater than 20 mg/l. Very hard water is another condition which may hinder the effectiveness of bioremediation. If water has a carbonate hardness of 400-500 mg/l, it may promote groundwater scaling.

Naturally occurring bacteria also must be present or introduced in sufficient quantities for bioremediation to occur. Soil samples from the site need to be collected and plate counts conducted for total heterotrophic bacteria (bacteria that use organic compounds as an energy source) and hydrocarbon-degrading bacteria. In-situ bioremediation would likely not be effective if the plate count is less than 100 colony-forming units unless supplemental bacterial populations are cultured for use.

Summary

Bioremediation is a well-established remediation approach and is suited for many petroleum release sites. In-situ bioremediation can be effective as a sole remediation alternative on most petroleum hydrocarbons as long as site geological and chemical characteristics allow for the addition of sufficient oxygen and/or nutrients to stimulate and maintain microbial growth. The DEQ Petroleum Release Section will not approve a Bioremediation Corrective Action Work Plan unless sufficient background information, including contaminant composition and mass, biological and geochemical parameter data, is obtained. (CFU) (EPA OUST, 1995)

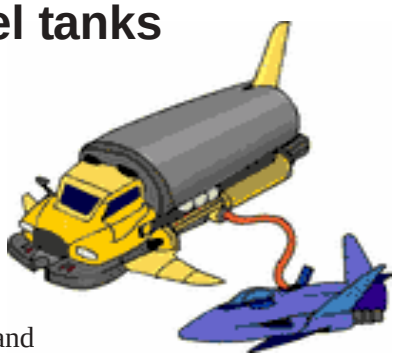
Further information: http://www.epa.gov/swertio1/download/citizens/bioremediation.pdf ■

Up close with the Air Force's underground fuel tanks

By Redge Meirhenry
Environmental Services Section, DEQ

Several personnel of the DEQ's Environmental Services Section and Petroleum Release Section recently accepted an invitation from Jim Hodges of Malmstrom Air Force Base in Great Falls to tour nearby missile launch facilities equipped with underground fuel storage tanks.

The Montana DEQ's interest in the missile facilities stems largely from the fact that Malmstrom AFB's 341st Space Wing controls 200 Intercontinental Ballistic Missile sites buried throughout 23,000 square miles in central Montana. Our interest was in the 200-plus underground fuel storage tanks that are within the missile sites – that's about 14 percent of the total registered underground fuel storage tanks in the state.



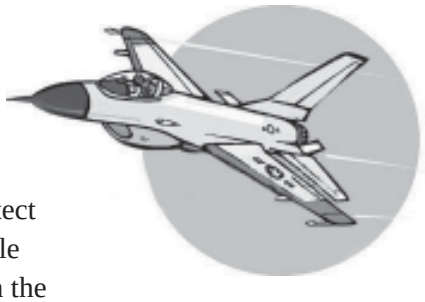
Our visit took us to an underground command center known as a launch control capsule with a launch command and control platform. On duty were launch control officers who told of the occasional removal of a missile from a Montana silo and transporting it to Vandenburg Air Force Base in California for test firing. The missile is fired to ensure that storage and inactivity has not operationally degraded the fired missile. The test also demonstrates overall reliability of the inventory of Minuteman missiles. Equally important, the test also ensures that officers assigned to carry out a fire order are in mental and physical condition to operate at the highest state of

Up close with the Air Force's underground fuel tanks - *continued from page 7*

preparedness. It's hard to imagine these officers' feelings as they face their consoles with launch control keys at the ready.

Our tour gave us a look at underground storage tank system design elements that are unique in the world. For one thing, the steel tanks for these installations are buried at greater depth below the earth's surface than average. And, the cathodic protection systems are designed to protect not only the deeply buried storage tanks, but an area the size of a missile silo and launch facility, as well, from debilitating effects of corrosion on all types of underground piping and equipment.

Equipment and systems associated with the missile silos' fuel storage tanks are only part of the story. The key element is in the fantastic people who do not simply manage the storage tanks systems, but protect the nation with a missile deterrent unmatched in the world. It's impressive to understand that our armed forces trains and transmits among recruits and officers complex levels of skills, knowledge and abilities to maintain an amazing level of readiness.



We met professionals on our tour with a marvelous breadth of dedication to duty and responsibility to national security. ■